AMENDMENTS TO THE CLAIMS

Please amend Claims 1-15, and 18; cancel Claims 16-17, and 19; and add new Claims 20-25 as follows:

1. (Currently Amended) A method of attaching a biological molecule ~~having at least one reactive amino, thiol or hydroxyl group~~ to a solid support having at least one available amino group, the method comprising ~~the steps of~~:

(a) reacting the available amino group on the solid support with an activating compound, the activating compound having the structure:

L_1 - X- L_2

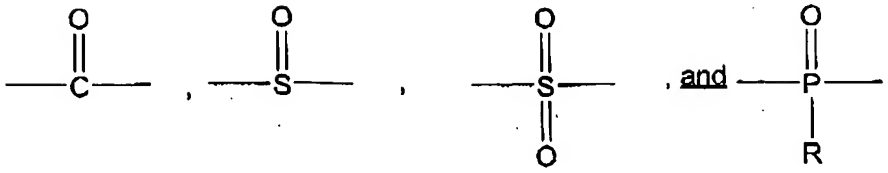
wherein L_1 and L_2 are leaving groups, and X is a moiety capable of nucleophilic substitution so that the reaction results in L_1 being displaced by the available amino group on the solid support to form an activated support; ~~and~~

(b) providing a biological molecule having at least one reactive amino, thiol, or hydroxyl group, the biological molecule selected from the group consisting of oligonucleotides, nucleic acids, polypeptides, and carbohydrates; and

~~(b)~~(c) reacting the biological molecule with the activated support, thereby displacing L_2 and attaching the biological molecule to the solid support.

2. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 1 wherein one or both of L_1 and L_2 are each independently selected from the group consisting of halogen, imidazole, triazole, pyrrole, pyrazole, thiazole, tetrazole, and O-Aryl-R, and wherein R is selected from the group consisting of halogen, nitro, cyano, and alkoxy moiety.

3. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 2 wherein X is selected from the group consisting of:



wherein

R is selected from the group consisting of alkyl, aryl, and OR^1;

~~wherein~~ R^1 is selected from the group consisting of alkyl and aryl; and wherein the alkyl and aryl groups have ~~having~~ no greater than about 18 carbon atoms.

4. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 1 wherein the activating compound is 1,2,4-carbonyl di-triazole.

5. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 1 wherein step (b) comprises depositing between about 5 to about 25 nanoliters of the biological molecule in a circular spot at one or more sites on the activated support, wherein the circular spot ~~having~~ has a diameter of between about 10 microns to about 500 microns at one or more sites on the activated support.

6. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 5 wherein one or both of the activating compound and the biological molecule is ~~the step of depositing comprises printing~~ printed onto the ~~activated~~ solid support.

7. (Currently Amended) ~~The~~ A method ~~of~~ according to claim ~~5~~ 1 wherein in one or both of step ~~b~~ (b), and step (c), the reaction occurs in a humid chamber.

8. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 6 wherein in one or both of step ~~b~~ (b), and step (c), the reaction occurs in a humid chamber.

9. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 1 wherein step (a) occurs in an

organic solution.

10. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 9 wherein step (a) occurs in the presence of a tertiary organic base.

11. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 10 wherein step ~~(b)~~ (c) occurs in an aqueous solution.

12. (Currently Amended) A method of attaching a biological molecule having at least one reactive amino, thiol or hydroxyl group to a solid support ~~having at least one available amino group~~, the method comprising ~~the steps of~~:

(a) providing a solid support having at least one available amino group, the solid support selected from the group consisting of a bead, a plate, and a film;

~~(a)~~(b) reacting the available amino group on the solid support with an activating compound, the activating compound having the structure:

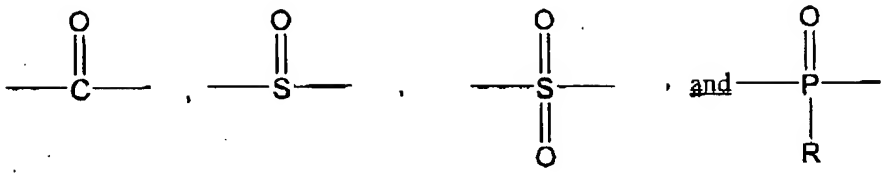
$$L_1 - X - L_2$$

wherein L_1 and L_2 are ~~identical~~ leaving groups, and X is capable of nucleophilic substitution so that the reaction results in L_1 being displaced by the available amino group on the solid support to form an activated support; and

~~(b)~~(c) reacting the biological molecule with the activated support, thereby displacing L_2 and attaching the biological molecule to the solid support.

13. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 12 wherein one or both of L_1 and L_2 are each independently selected from the group consisting of halogen, imidazole, triazole, pyrrole pyrazole, thiazole, tetrazole, and O-Aryl-R, and wherein R is selected from the group consisting of halogen, nitro, cyano, and alkoxy moiety.

14. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 13 wherein X is selected from the group consisting of:



wherein

R is selected from the group consisting of alkyl, aryl, and OR^1; ~~having no greater than about 18 carbon atoms, and~~

~~wherein~~ R^1 is selected from the group consisting of alkyl and aryl, and wherein the alkyl and aryl groups have ~~having~~ no greater than about 18 carbon atoms.

15. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 12 wherein the activating compound is 1,2,4-carbonyl di-triazole.

16. (Cancelled)

17. (Cancelled)

18. (Currently Amended) ~~The~~ A method ~~of~~ according to claim 1 further comprising the step of washing from the solid support non-bound compounds after step (a) and before step ~~(b)~~ (c).

19. (Cancelled)

20. (New) A method of attaching a biological molecule to a solid support comprising:

(a) providing a solid support having at least one available amino group, the solid support selected from the group consisting of a bead, a plate, and a film;

(b) reacting the available amino group on the solid support with an activating compound, the activating compound having the structure:

L_1 - X- L_2

wherein L_1 and L_2 are leaving groups, and X is a moiety capable of nucleophilic substitution so that the reaction results in L_1 being displaced by the available amino group on the solid support to form an activated support;

(c) providing a biological molecule having at least one reactive amino, thiol, or hydroxyl group, the biological molecule selected from the group consisting of oligoneucleotides, nucleic acids, polypeptides, and carbohydrates; and

(d) reacting the biological molecule with the activated support, thereby displacing L_2 and attaching the biological molecule to the solid support.

21. (New) A method according to claim 20 further comprising the step of washing from the solid support non-bound compounds after step (b) and before step (d).

22. (New) A method according to claim 20 wherein step (b) comprises depositing between about 5 to about 25 nanoliters of the biological molecule in a circular spot at one or more sites on the activated support, wherein the circular spot has a diameter of between about 10 microns to about 500 microns at one or more sites on the activated support.

23. (New) A method according to claim 20 wherein one or both of the activating compound and the biological molecule is printed on the solid substrate.

24. (New) A method according to claim 20 wherein in one or both of step (b) and step (d), the reaction occurs in a humid chamber.

25. (New) A method according to claim 20 wherein the biological molecule is an oligonucleotide having at least one free amino or thiol group.